DOCUMENT RESUME

ED 377 893 JC 950 003

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TITLE Does the Key Fit the Lock? A Review of Research on GED Recipients in Community Colleges.
PUB DATE Oct 93
NOTE 36p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; Academic Persistence; *Community Colleges; Comparative Analysis; *High School Equivalency Programs; *High School Graduates; Literature Reviews; Two Year Colleges; *Two Year College Students

ABSTRACT

This paper reviews research published in the last 20 years which evaluates the performance of general education development (GED) certified students at public two-year community colleges. First, information is provided on the role and enrollment conditions of today's community colleges in America, focusing on the growth of community college, diversity of student needs, degree completion, students' uses of community colleges, and measures of success in community colleges. The first set of studies reviewed compared GED and high school diploma (HSD) students who graduated from a community college, and GED and HSD students who were academically successful. Indications were that among graduates academic achievement was not affected by status of high school completion; and that among academically successful students, traditional HSD students needed reinforcement skills at the same level as GED recipients; that GED and HSD students succeeded equally well; and that GED recipients were highly successful and high achievers. The next group of studies compared GED and HSD students among new enrollees. The studies' major conclusions were: (1) there were not significant differences in persistence rates; (2) GED students did not achieve the same degree of academic success as HSD students; (3) GED students were more likely to be older and female, with no significant differences in the academic performance of the two groups; (4) the GED is a valid and reliable student entrance certificate; and (5) full-time GED student had lower grade point averages and complete fewer credits, though there were no differences among part-time GED and HSD students. The final set of studies compared GED students with all other enrollees. Three studies revealing no significant differences. One study showed higher achievement for HSD students, and one study showed higher achievement for GED students. Contains 40 references and 7 tables. (KP)

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ED 377 893

DOES THE KEY FIT THE LOCK?

A REVIEW OF RESEARCH ON GED RECIPIENTS IN COMMUNITY COLLEGES

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OCTOBER, 1993

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Introduction

Key to Success

Research suggests that a strong predictor of economic success in our society is a person's educational attainment. Higher education is the lock on the golden door. A high school diploma often serves as a key to open the lock. If a person drops out of high school, as almost 14% of young people in America do (NCES 1992a, indicator 20), is that golden door shut forever? (Note: According to the Bureau of the Census, October 1990 Current Population Survey, 13.6% of 19- to 20-year-olds had not completed high school and were not currently enrolled in school.)

Disparities in education lead to disparities in future wages. During the mid- eighties, workers with 1-3 years of college earned about 15% more than workers with only a high school diploma. Those with four years of college earned about 41% more than high school graduates, and workers with four years of college and a Bachelor's degree earned about 55% more than high school graduates (Kane & Rouse, 1993).

The Tests of General Educational Development (GED) have served for fifty years as a way for high school dropouts to get a second chance at earning a high school diploma. By passing these tests a person who has dropped out of high school earns a certificate that is widely recognized by institutions of higher learning, by employers, and by the United States Census as being the equivalent of a traditional high school diploma for purposes of college enrollment and entry level jobs. Can the GED, like a high school diploma, be the key that unlocks the door to higher education?

Purpose

According to the American Council on Education, 61% of the 790,565 GED examinees in 1992 planned to continue their education. Many will enroll in a local community college (Beder & Hartwig, 1992; Cervero & Peterson, 1982). Will they be able to succeed there? How does the success of GED recipients compare to the success of traditional high school graduates at public two-year community colleges? The purpose of this paper is to review research published in the past twenty years which evaluates the performance of GED certified students at public two-year community colleges.

Methods

Criteria for Study Inclusion

To be included in this review, studies had to meet the following criteria:

1. Data must represent students in 2-year public colleges in the United States.

2. Data can not be limited to only technical and vocational training programs.

Some studies (Quinn, 1986; Sharon, 1972; Swarm, 1981) were not included because data from the two-year colleges in the studies were aggregated with data from four-year colleges (see Appendix A for a discussion of Quinn, 1986). Other studies (Banner, 1989; Shepherd, 1992; Swift, 1989; Ziegler, 1992) were not included because they restricted their populations to students enrolled in technical or vocational training.

Definitions

For the purpose of simplicity, the following abbreviations will be used in this review:

GED student - A person who has received a GED high school equivalency diploma and is enrolled in a postsecondary school.

HSD student - A person who has received a traditional high school diploma and is enrolled in a postsecondary school.

NHSD student - A person who has not received a high school diploma or equivalent certificate and is enrolled in a postsecondary school.

GPA - The cumulative grade point average of all courses taken in a postsecondary school.

Procedure

The studies included here were located by means of an extensive search. The search began with an existing bibliography (Johnson & Valentine, 1991) and utilized ERIC, Dissertation Abstracts, Compuserve's Knowledge Index (a version of Dialog Information Services), several Gopher services (Gopher is an automated Internet search protocol developed by the University of Minnesota to "go fer" information), the Electronic Bulletin Board of the U.S. Department of Education's Office of Research and Educational Improvement, and citations made in other reports. Every attempt was made to identify all

studies done on the topic of GED recipients in community colleges. Information on community colleges was also gathered and read for contextual background.

As many of the studies as possible were obtained. In some cases, abstracts were used in place of the complete studies. If an abstract was substituted, the study was not included in the text of this review but was included in the tables summarizing the research and noted with an asterisk (see Tables 1-4).

After various OERI datasets were identified via the OERI Electronic Bulletin Board, interviews were conducted, either in person or by phone, in order to obtain additional information about the GED variable in each dataset. The CD-ROM NPSAS:90 Table Generation System was utilized to obtain data from the National Postsecondary Student Aid Study 1989-1990.

Context

It is impossible to assess research that has been done on the impact of holding a GED on the community college student without first understanding the role and enrollment conditions of community colleges in America today. Common assumptions about colleges often prove false in the context of community colleges.

Growth of Community Colleges

Since the passage of the Higher Education Act in 1965 there has been a tremendous growth in two-year public colleges in America. In 1990 the 999 public 2-year colleges in this country enrolled 1,044,000 first-time college freshmen, almost half the national total. (NCES 1992a, table 168). Total fall 1990 enrollment of these community colleges (4,937,663) exceeded the total undergraduate enrollment of all 4-year public colleges and universities (4,677,769) (NCES 1992a, table 185).

Diversity of Needs

Community college students are a disparate group. They include academically able students with high socio-economic backgrounds as well as students who are disadvantaged both academically and socially (Alexander, Holupka, & Pallas, 1987). Young students, old students, full time students, part time students, students who never finished high school and students who have already earned a college degree all expect their diverse needs to be met by the same institution. Although some students enroll in community

colleges with the clear goal of transferring to 4-year schools, most enroll for vocational training. Some take a variety of courses seeking a career path; others enroll to take courses just for fun (Grubb, 1988, 1991). To meet the needs of such a diverse student body, community college curricula include not only academic but also vocational, remedial, and avocational courses. Ninety percent of two year colleges offer remedial education (Mansfield & Farris, 1991).

Degree Completion

A common assumption is that people attend colleges to earn degrees. That is often not the case. According to the High School and Beyond survey (NCES, 1991, ch.3), only about half of the students who enrolled full-time in a 4-year college in 1980 had graduated with a Bachelor's degree by 1986. This trend becomes magnified in 2-year colleges. Only 20% of those who attend a community college earn an Associate's degree within 12 years (Adelman, 1992).

How Community Colleges are Used

Clifford Adelman's The Way We Are: The Community College as American Thermometer (1992) is a descriptive study of how members of the high school graduating class of 1972 used community colleges from the time of their graduation through 1984. Based on the data from the National Longitudinal Study of the High School Class of 1972 (NLS-72), this report paints a picture of community college use by young adults that is critical to one's understanding of measures of success in community colleges. Because the study began with graduating high school seniors it contains no GED students. It does include, however, the cohort of students that makes up the comparison group in many of the studies reviewed here.

The National Longitudinal Study of the High School Class of 1972 began with 22,652 high school seniors. The Postsecondary Education Transcript Study (NLS/PETS) contains data taken from the school transcripts of 12,599 students in the original sample who attended any kind of school from the time of their high school graduation through 1984. During those twelve years, one out of every four in the original sample earned at least one credit in a community college.

Adelman compared community college enrollees to those whose formal education ended with high school and to those who enrolled in other kinds of postsecondary institutions. He concluded that:

1. The community college functioned in a variety of "occasional" roles in the lives of individuals. It accommodated their decisions to engage in learning on their own terms, and in their own time. Even if students were constrained by poor academic preparation or economic circumstances, they seemed to make of the community college what they wanted to make of it. They used the institution for a time, and then moved on....

2. The population using community colleges was more representative of the Class of '72 than those who either did not continue their education at all or who continued it only at 4-year colleges.... In many ways, those who attend community colleges are more typical of young adults in the U.S. than any other population. They are the average.

3. The community college played a small role in credentialling this generation. The Associate's degree was a weak force: very few people knew what it was or planned to get it.... At the same time, though, the curricula pursued by the mass of community college students indicate that they were more interested in learning or testing their tolerance for higher education than in degrees. Most of them took groups of courses that could be defined in terms of perceived utility on the job or that, in effect, completed their secondary school education.

4. There were no clear cut occupational outcomes of community college attendance.

5. Some patterns of community college attendance were associated with higher earnings and rates of home ownership than other patterns of postsecondary attendance. But overall, the only pattern of attendance that consistently overcame initial economic circumstance involved a 4-year institution, whether or not a degree was earned. (p. v - vi)

Measures of Success in Community Colleges

Because of the unique context of community colleges, traditional measures of success must be assessed critically. Most studies here reviewed were small-scale and depended upon data readily available in student records. Their criteria for indicators of success were therefore limited.

Degree completion.

When comparing the success of GED students and HSD students in community colleges, the problem becomes What is an appropriate measure of success? As discussed above, most people who attend community colleges do not complete degrees there. Degree completion, then, is not an appropriate measure of success, except perhaps for the minority of community college students who seek degrees or transfer. None of the studies reviewed here used degree completion as the only means of comparing the success of the two groups.

Course completion.

Many people come to a community college to learn specific skills. When those skills have been acquired, those students have been personally successful. For students who withdraw and elect not to continue after successfully meeting their personal goals, dropout cannot be considered failure. Attrition and retention rates, therefore, are not appropriate measures of failure or success. Outcomes can only be accurately evaluated when student goals are considered.

Course completion might be one measure of success. It seems reasonable to assume that a student begins a course with the intention of completing it. If a student enrolls in a community college, begins a course, and then drops out with zero credits, that student has probably not met his personal goal. Dropout rate can only be a valid measure if a student drops out with zero credits, suggesting that no courses were successfully completed. The ratio of credits completed to credits attempted seems also to be a valid indicator of success.

GPA.

GPA is also an imperfect indicator of success. As the available research suggests (Adelman, 1990; Grubb, 1988), many students enroll in a two-year school to acquire certain skills with no intention of seeking a degree. For these enrollees, grades may be unimportant. GPA is, however, the most frequently used measure of success in the studies reviewed here, most probably because it is readily available from student records.

Placement Test Scores

If one is trying to determine whether the GED student is as prepared for college as the HSD student, then scores on placement tests and number of required remedial courses are valid indicators. Several included studies use need for remediation as a point of comparison.

Population Disparities

Life status differences

In addition to being aware of different measures of success when evaluating studies on the success of the GED student in community colleges, one must also keep in mind life-status differences between the

GED and the HSD student. According to data from the NPSAS:90 study, the GED student is older, more likely to be female, more likely to be married, less likely to be living with parents, less likely to be a full-time student, and more likely to be receiving financial aid than the HSD student (see Tables 5&6). Clearly, GED students are more likely to be fulfilling adult life-roles, roles which often compete with the role of student. Adult role behavior creates constraints which are likely to impact on attendance, course completion, and other variables often used as measures of success (Cross, 1981; Darkenwald & Merriam, 1982).

Survival of the fittest

Most public 2-year colleges require only a high school diploma or its equivalent for admission. This open door policy accounts for the disproportionate number of first year college freshmen discussed above. Few freshmen in a 2-year college, however, ever attain the status of second-year student Only about one in five graduate. Consequently, studies that use graduates or second- year students as the study population are dealing with a very different group than are studies that use all enrollees or all first year students as a population.

For a thorough and reasonable evaluation of the impact of GED certification on the community college student, a study would have to take into account differences in measures of success, differences in life status, and differences in level of enrollment of the study population.

Review of the Literature

Comparison of graduates

Community College of Allegheny County

Clark (1987) designed a study of the academic achievement of GED graduates of the Community College of Allegheny County. Between January 1985 and August 1986, 1,018 students whose high school code designations were recorded in college records graduated from Boyce Campus of CCAC with an Associate degree. Boyce Campus requires only a high school diploma or a GED certificate for admission. Of the 1,018 graduates, 56 (5%) had been coded as GED recipients on their initial admissions application.

A random sample of 56 HSD graduates was used as a comparison group. Clark gave no other information on the composition of each group.

The study considered only the final cumulative grade point average of each graduate. Patterns and length of enrollment, type of program, sex, race, age and previous college experience were not measured. At Boyce Campus of CCAC a minimum of 60 credit hours and a GPA of at least 2.00 are required for earning an Associate degree. GED graduates had a mean GPA of 3.21 and HSD graduates had a mean GPA of 3.03. A t-test showed no significant difference between the two groups. Clark concluded that, "based on this study, academic achievement was not affected by status of high school completion" (p. 21). If Clark had given initial enrollment figures for both groups or an estimate of what percentage of enrollees were GED recipients we might be better able to judge the validity of his conclusion.

Comparison of successful students

North Shore Community College

Turner (1990) conducted a study to demonstrate that GED graduates "could be successful in higher education" (p.2). At North Shore Community College more than 20 percent of each graduating class had begun college with a GED. Turner's objective was to collect and analyze data on GED students currently enrolled at NSCC who were succeeding there. She "chose not to focus on whether or not students who started college with a GED failed or dropped out" (p. 5), but instead to determine what successful students had in common. Turner defined a successful student as one who had:

> (1) attended more than one semester; (2) matriculated into a specific program of study; and (3) earned a Cumulative Grade Point Average (CGPA) of at least 1.00 At North Shore Community College, a CGPA of 3.00 to 4.00 represents a B to A+; a 2.00 to 2.99, represents a C to B-; and a 1.00 - 1.99, represents a D to C-. A grade of D is considered passing, although a cumulative average of 2.00+ is required for graduation (p. 5).

The results of the study were to be used by NSCC for the improvement of GED Preparation and Testing as well as for improving college retention by providing new information to the instructional and support services of the college which could be used in helping new GED enrollees make the transition to college.

In addition to CGPA, variables included in the study were program of study, division of enrollment (night or day), and enrollment pattern. This data was collected from college enrollment records for a sample of 160 students. Turner is not specific about how and why these 160 students were chosen from the Student Demographic File. All members of the survey group were enrolled in at least one credit course for Fall, 1986, were successful according to Turner's definition, and had passed the GED in Massachusetts between 12/31/77 and 9/6/86.

Turner also administered a survey in May, 1987, to the 160 students in the study. A telephone follow-up to non-respondents and a second mailing yielded a total of 87 responses, a response rate of 54% for this survey. The nineteen questions on the survey asked about program of study, age at GED completion, age at college enrollment, employment, use of public transportation, schooling before passing the GED, reasons for enrollment at NSCC, college services, pattern of attendance, and willingness to help others earn the GED.

Eighteen faculty members who had contact with GED students were interviewed to determine their perceptions of why some GED students succeeded. These perceptions were compared with data from the student survey to "match faculty/student perceptions of successful behaviors" (p.6).

Turner found that GED-credentialed students earned above average CGPA's. She found that successful students were enrolled in both the day and night divisions, had both continuous and interrupted patterns of enrollment, had support of family, friends, and college staff, were "self-motivated," tended to have "consistent contact with one program coordinator and/or advisor" (p. 8) and used and were satisfied with college services.

She identified six other relevant factors that related to the success of GED recipients:

1. Attendance in a formal GED preparation program AND formal grade level completion above grade 10 facilitates success in higher education.
2. Age of completing GED and age of GED student enrollment in college are not significant factors in determining success.
3. GED scores most likely cannot be used as CGPA predictors (i.e., those with higher GED scores will not necessarily earn higher CGPAs).

4. Most GED recipients are working and have family responsibilities. Working part-time (20 hours or less) seems to have no influence on academic achievement, whereas working full-time (35 hours or more) has a negative influence.

5. In a multi-campus setting, attendance of classes at two campuses seems to have little effect on cumulative grade point averages.

6. Most successful students will drive to the campus rather than use public transportation. Those students who use public transportation appear to have lower CPGAs. (p. 3)

Turner clustered her data according to program of study, and within each program of study she grouped students by GPA, division of college (night or day), and enrollment patterns. She then clustered the programs of study according to GPA. Group 1, made up of programs in which students earned the highest GPAs, included Human Services, Health and Liberal Arts/Special Programs. Sixty-four percent of the 98 students enrolled in these programs had a GPA of B to A+. Group 2 contained the programs of Office Technology, Business, and Industrial Technology. In this group 56% of the 62 students enrolled in these programs had a GPA of B to A+.

Although almost 100 pages of data were included in the report, no statistical comparisons seem to have been done. Turner concluded that "GED recipients are highly successful and are high achievers in college" (p. 104).

This study is limited to a single institution and looks at only those GED students who are matriculated with a grade point average of "D" or better. If Turner's objective was to isolate those factors that contribute to a GED student's success, defined by GPA, it might have been helpful to cluster the students according to GPA and draw comparisons between those with high GPAs and those with low GPAs. Turner had a respectable response rate on her surveys, combined data gathered by survey with data gathered from school records, and presented her data in great detail. Her conclusion may be over generalized due to her limited study sample.

Wilkes Community College

Byrd, Hayes, Hendrix, and Simpson (1973) compared the performance level of GED freshmen at Wilkes Community College with the performance level of HSD freshmen. They examined the entrance reading placement score, grade earned in English 111 and grade earned in Mathematics 111.

The researchers began with a list of 311 people who had passed the GED test at Wilkes Community College from January, 1966 to November, 1972. College enrollment lists were searched to find which of these GED holders had enrolled in the college and had taken both freshman level math and English. Thirty of these 311 students had completed both English 111 and Math 111 and were included in the study. Fifty HSD students who had completed both English 111 and Math 111 were randomly selected as the comparison group. It is unclear why the control group was unequal to the study group, with 50 rather than 30 subjects. Age, sex, and enrollment status were disregarded.

T-tests ($p < .05$) showed that there were no significant differences between the GED students and students with traditional high school diplomas in reading placement scores, English 111 grades or Math 111 grades.

No background information was given about the institution, its size or admission policies This was a very limited study using only those GED students who had completed their freshman year within a relatively short period of time. It is interesting to note, however, that almost 10% of those who had received a GED at WCC from January, 1966 to November, 1972 had completed the freshman year by 1973.

The researchers concluded that traditional high school graduates needed "reinforcement skills at the same level as the GED recipients" (p.42). In other words, their study suggested to the authors not that GED students were as well prepared for college as traditional high school graduates, but that the traditional high school graduates were as poorly prepared as were the GED graduates.

Table 1

Studies Comparing Graduates

Study and date	School	Sample	Control group	Demographic descriptors	Comparisons	Findings
Clark 1987	Boyce Campus, Community College of Allegheny County	All 56 GED certified graduates, 1/85-8/86	56 randomly selected HSD graduates, 1/85-8/86	None	GPA	"Based on this study, academic achievement was not affected by status of high school completion."

Table 2

Studies Comparing Successful Students

Study and date	School	Sample	Control group	Demographic descriptors	Comparisons	Findings
Byrd, Hayes, Hendrix, Simpson, 1973	Wilkes Community College	30 GED students who had completed Eng. 111 and Math 111	50 HSD students who had completed Eng. 111 and Math 111	None	Reading placement scores Final grade in Eng.111 Final grade in Math 111	"Traditional high school graduates need reinforcement skills at the same level as the GED recipients."
* Scales 1990	Three Alabama junior colleges	All 47 GED students enrolled for 15 quarter hours	47 HSD students		ACT/ASSET test scores GPA Grade in Eng.I Grade in Math I	"GED credentialed students do succeed as well as HSG diploma students in community and junior colleges."
Turner 1990	North Shore Community College Mass.	160 GED students "who were succeeding at NSCC"	None	Age GED score Previous schooling Transportation Use of college services Program of study	GPA Program of study Pattern and division of enrollment	"GED recipients are highly successful and are high achievers in college."

* Not reviewed here

Comparison of new enrollees

A community college in the Midwest

Willett (1982) studied first-time enrollees who entered a two-year public community college in the midwest during the fall of 1976. Sixty -eight students with GED diplomas and 68 students with traditional high school diplomas were randomly selected from the study population. There were more men than women in the samples and ages ranged from 19 to 55. Each group was followed for five years.

Comparing "educational progress" measured by attendance, re-enrollment, course withdrawals and earned credit hours per semester, Willett found no statistically significant difference at the .05 level between the two groups. Comparing "educational achievement" measured by GPA and rate of graduation, Willett also found the two groups to be statistically indistinguishable. Although the number of students who withdrew at some time during the research period was not given, it is interesting to note that five years from first enrollment, 15 GED students and 19 HS. Diploma students from each group of 68 had graduated with either an associate degree or a one-year certificate. Based on her findings, Willett suggested that "the GED is a valid and reliable student entrance certificate" (p. 223).

Lorain County Community College

Schillo (1990) compared the academic success of GED students and HSG students at Lorain County Community College in Elyria, Ohio. She used college placement exam scores, grade point average, credit hours attempted, and credit hours earned as measures of success. The study population consisted of students admitted to the 1988 Fall term. Forty GED holders were identified through student records. Schillo wass not clear about whether those forty made up the entire population of GED admittees for Fall 1988 or, if not, how the forty were selected. She did specify that 40 high school diploma subjects were randomly selected by student number. The groups were not matched. The GED group was 45% male, 42.5% married, 77% Caucasian, 10% Afro-American, 10% Hispanic. The HSD group was 27.5% male, 12.5% married, 92.5% Caucasian, 2.5% Afro-American, 5% Hispanic. Although no mean age was given, 52% of the GED group were below 30 compared to 87.5% of the HSD group.

Academic information for each subject was gathered from the college data base. Means for college placement exam scores, grade point average, credit hours attempted, and credit hours earned were calculated for each group. Analysis of variance indicated that the mean scores of the HSD group were higher ($p < .05$) than the mean scores of the GED group for each measure of success. The GED group had a mean GPA of 1.95, attempted an average of 12.4 credit hours and completed an average of 10.8 credit hours. The HSD group had a mean GPA of 2.66, attempted an average of 33.3 credit hours and completed an average of 31.4 credit hours Mean scores indicated that GED enrollees needed developmental course work in all areas but traditional high school graduates only needed course work in developmental algebra.

Schillo acknowledged that "other factors in this study which were not controlled may have contributed to the significant differences, for example: socioeconomic status, employment, and the number of years between withdrawal from high school and completion of the GED" (p. 7). She recommended that similar studies be done at all institutions of higher learning " to determine if the GED is a reliable measure of knowledge. If other studies were to conclude that GED students lack needed skills, changes in the GED test and changes in the services offered to these students at the post secondary level would be necessary to ensure the academic success of these students" (p. 7).

Even though Schillo stated that "The mean scores of the diploma students indicated that no English or reading developmental course work was needed" (p. 6), an examination of her tables suggest that course placement for traditional high school graduates was not so clear -cut. Recommended placement scores for English were: Developmental = 0 - 47; College Composition = 50 - 64. The mean English placement score for HSD students was 48.3, placing them clearly in the "Decision Zone." For Reading Skills, a score of at least 28 was required for the recommendation "No Developmental Needed" The mean score of the HSD group was only 27.7, again placing them in the decision zone. This suggests that while the average GED enrollee did not qualify for regular college placement on the basis of all three placement tests, neither did the average HSD enrollee.

Table 3

Studies Comparing New Enrollees

Study and date	School	Sample	Control group	Demographic descriptors	Comparisons	Findings
* Beltzer 1985	Queensboro Community College, New York	198 GED students entering fall 1982	201 HSD students entering fall 1982	Age Gender	GPA Persistence Academic integration	No significant difference in persistence rate between GED and HSD students
Schillo 1990	Lorain County Community College, Ohio	40 GED students admitted fall 1988	40 randomly selected HSD students admitted fall 1988	Age Gender Race Marital status	GPA College placement test score Credit hours attempted Credit hours earned	GED students do not achieve "the same degree of academic success as high school diploma students."
* Spillar 1982	College of the Mainland	All 105 GED 1st time freshmen enrolling fall 1978	105 randomly selected 1st time freshmen enrolling fall 1978	Age Gender Race	GPA College placement test score Persistence Grade in freshman English	GED students were older and more likely to be female. There were no significant differences in academic performance between the two groups.
Willett 1982	A public midwestern community college	68 GED students randomly selected from 1st time freshmen enrolling fall 1976	68 HSD students randomly selected from 1st time freshmen enrolling fall 1976	None	GPA Patterns of enrollment Degree completion Credit hours earned	"The GED is a valid and reliable student entrance certificate."
* Wilson 1982	Tulsa Junior College, Oklahoma	All first time entering GED students fall 1981	All first time entering HSD students fall 1981	Age Gender Race Marital status Educational goals Patterns of attendance	GPA Attrition Credit hours attempted /completed	Full time GED students have lower GPAs and complete fewer credits. There is no significant difference in the academic performance of part-time GED and part-time HSD students.

* Not reviewed here

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Comparison of all enrollees

Community colleges in Alabama

Hannah (1972) examined the achievement of GED junior college students and HSD junior college students in Alabama.

The total population for the study consisted of the 35,797 students who had been enrolled at three Alabama junior colleges from 1965-1971. About 5% (1,745) of these students were GED certified. The three colleges were chosen to be representative of all junior colleges in Alabama on the basis of geographic location, size, and demographic composition of student bodies. Hannah used a random sample of 300 GED certified students and a "matching" sample of 300 HSG students to compare GPAs and drop-out rates.

Dropout rates for both groups were high during the first year. HSD students left at a significantly higher rate (60%) than GED students (47%). About a third of the remaining students in both groups dropped out during the second year. Of the two groups of 300 enrollees, 91 HSG students and 116 GED students stayed in school after two years.

Hannah found no significant difference in the first year GPA between the two groups, although when age was taken into account, the first-year GPA of GED enrollees 21 years old and younger was significantly lower. By the end of the second year, however, the GPA of those students with a GED diploma was significantly higher than the GPA of students with a traditional high school diploma.

Hannah concluded that "the GED Certificate is a valid substitute for the high school diploma as a credential for admission to the junior colleges in Alabama" (p. 74).

Broward Community College

Grady (1983) studied the success of GED enrollees at Broward Community College, a public, fully accredited two year school in Ft. Lauderdale, Florida. This school had recently seen a dramatic increase in GED enrollees. During the four years 1974 - 1977, 558 students entered with a GED degree. The number jumped to 4,349 for the five years 1978 - 1982 . This paralleled a steady increase in GED diplomas being awarded by the state of Florida, from 1,073 in 1977 to 2,536 in 1981. The percentage of candidates passing the test also increased, from 70.6% in 1977 to 81.6% in 1981.

Grady used as her study group all 458 GED students who entered Broward Community College in the fall term of 1980. Her comparison group, 458 students entering fall 1980 with a traditional high school diploma, was matched for race, sex, and age. In all, Broward Community College had 8,884 first-time enrollees for fall, 1980. GED students made up about 5% of the total first-time enrollment.

Grady broke down her comparison further into students younger than 19 years of age (n=125) and those 19 or older at time of enrollment (n=333). She compared these groups according to enrollment in remedial courses, degree of success in remedial courses, GPA, program completion, length of enrollment, and major area of study.

Enrollment in remedial courses was significantly different for the two groups. Of the total 696 remedial enrollments, 430 were GED students, and 266 were HSD students. Grady noted that one student might be enrolled in more than one remedial course. Grady found no significant difference in the degree of success in remedial courses between the two groups. In testing this question, however, she did not take into account the proportion of completers to enrollees in each group. Of 430 GED enrollees, 167, or 39%, completed remedial courses; of 266 HSD enrollees, 159, or 60%, completed remedial courses. The attrition rate in remedial courses was significantly higher for GED graduates than for traditional high school graduates.

Grady studied the two groups for a three-year period. At the end of this period a large number from both groups either had a zero grade point average due to withdrawals from courses, or had completed just one course. Eliminating these students for the purpose of computing GPA left 236 GED entrants and 253 HSD entrants. There appeared to be no significant difference in GPA between these two groups.

Completion of a degree or certificate within the three year period was very low (9%) for the entire population of 8,884 students who entered Broward Community College during the Fall of 1980. Of the groups in the study, 3.5% of the GED entrants and 7.2% of the HSD entrants earned a degree or certificate within three years. There was no significant difference in length of enrollment , although the group with the largest number stopping out after just one term was the GED entrants younger than 19.

Grady concluded that "while GED entrants may perform in a manner not significantly different from their high school graduate counterparts, they probably are not as well prepared for post-secondary educational experiences" (p. 59).

Community colleges in Florida

Grise and Klein (1986) conducted a study for the Florida Department of Education comparing the success of traditional high school and GED graduates at community colleges in Florida. They contacted the registrars of the 28 community colleges in Florida and requested specific enrollment data. Only ten of the 28 registrars responded. Data that was collected did not necessarily cover the same time period for each institution. The study estimated that about 7.5% of the community college students in Florida are GED graduates, although no specific numbers of students were given. According to this report, degree completion rate was about twice as high for HSD enrollees (49%) as for GED enrollees (26%). There was no significant difference in the length of time taken by GED and HSD students to complete a degree.

Grise and Klein found no significant difference in the GPA of HSD and GED students in their original report. (p. 15). However, in the ACE Research Brief of the same report Grise and Klein (1987) state:

> The overall GPA of GED and traditional high school graduates were obtained by the survey. Statistical analysis of these data revealed that a significant difference exists between GED and traditional high school graduates, with traditional graduates having, on the average, a slightly higher GPA" (p.2).

Due to the limited data, inconsistencies between tables in the report, and lack of information on statistical procedures, conclusions drawn by this study must be held in doubt.

Kankakee County Community College

McElroy (1990) compared the academic success of GED students and HSG students at Kankakee County Community College, sixty miles south of Chicago, Illinois Of the 2,326 students enrolled at KCC during the 1990 fiscal year, 1,825 had traditional high school diplomas, 126 had GED certificates, and 375 held neither certificate. McElroy randomly selected 50 students from the GED and from the HSD groups.

No demographic information or comparison of enrollment pattern or credits earned or attempted is given for either group.

GPA for each student was gathered from college transcripts. A t-test indicated that the mean GPA of the GED group was significantly higher ($p < .05$) than the mean GPA of the HSD group. An examination of the data shows, however, that the two mean GPAs, 2.93 for the GED group and 2.76 for the HSD group, both probably equate to a C+ on a letter scale. It is evident that neither group is excelling academically.

Table 4

Studies Comparing All Enrollees

Study and date	School	Sample	Control group	Demographic descriptors	Comparisons	Findings
* Bigby 1989	Wenatchee Valley College, Washington	83 GED students	106 HSD students, randomly selected	Age Gender	GED scores GPA	"Students with a high school diploma achieve significantly higher grade point averages"
Grady 1983	Broward Community College, Florida	All 458 GED enrollees fall 1980	458 fall '80 enrollees matched for race,sex, age	Age Gender Race	GPA Remedial course enrollment Remedial course completion Degree completion	"While GED entrants may perform in a manner not significantly different from their high school graduate counterparts, they probably are not as well prepared for postsecondary educational experiences"
Grise and Klein 1986	Florida Community Colleges	No N given 1069 inferred from tables	No N given	None	GPA Patterns of enrollment Degree completion	"It appears that GED graduates are successfully achieving the type of higher education they seek from Florida's community college system"
Hannah 1972	Alabama Junior Colleges	300 GED students randomly selected from all GED students ever enrolled in three colleges	300 HSG students matched according to college	Age Gender Veteran status	1st year GPA 2nd year GPA Dropout rate	"Not only do GED students achieve as well, based on GPAs earned, during the first year and better during the second year, their dropout rate is also lower than that of HSG students."
McElroy 1990	Kankakee Community College, Illinois	50 GED students enrolled during 1990, randomly selected	50 HSD students enrolled during 1990, randomly selected	None	GPA	GED students had a significantly higher GPA than did HSD students
* Means 1987	Casper College, Wyoming	All 171 GED students enrolled, fall 1986	Total student population	Age	GED scores GPA Academic division, Academic status	GED students performed as well as HSD students

* Not reviewed here

Evaluation

Available Research

The studies reviewed here are all limited in scope and have diverse findings. All are restricted to specific institutions. None take into account critical life-status differences between HSD and GED students.

These studies all assume a traditional college attendance pattern, a pattern that begins with enrollment in a degree-oriented program and culminates in certification within a prescribed amount of time. There is nothing to suggest that such a pattern does or should typify GED students. Indeed, such a pattern is atypical for the majority of community college enrollees.

Depending upon the population that they serve, community colleges are very different from each other. Some are primarily academic institutions, some are primarily vocational-technical schools, some are primarily schools of basic skills with more than 85% of enrolled students requiring remediation (Richardson, 1988). Most try to be many things to many people. It is unrealistic to expect that the results of a study done at a single institution can be generalized to apply to the whole spectrum of community colleges.

All reviewed studies that used a comparison group used a sample of students who were traditional high school graduates. To conceptualize HSD and GED students as being equal in all respects except certification status is inappropriate. There are many intervening variables such as life status and motivation that have little or nothing to do with ability or prior achievement.

Often included in the HSD comparison population are both academically talented students using the community college as a first step toward an advanced degree, and "reverse transfers," students who have studied at or have even graduated from 4-year schools and are now enrolled in a community college in pursuit of certification, usually in an allied health field (Richardson, 1988). Can the GED student be expected to demonstrate parity with these students? Perhaps a more appropriate group to compare the GED students with would be the high school dropouts who never earned a GED.

What we know

What, then, do we know about GED students in community colleges? Based on the studies available, it would be difficult to estimate how many GED students enroll in community colleges. It would be difficult, based on these studies, to generalize about how GED community college students and HSD community college students are alike and how they are different in their entering characteristics, enrollment patterns, performance and outcomes. None of the studies compared the GED student who was successful in a community college with the GED student who was unsuccessful in a community college in order to determine critical factors that contribute to success.

What we need to know

Many community colleges have opened their doors wide enough to allow those with no high school diploma to enter. According to estimates based on NPSAS:90 data, the 1990 national community college enrollment included 6,124,750 HSD students, 439,230 GED students, and 157,320 NHSD (no high school degree) students. A comparison between the GED-certified community college student and the community college student who has no high school diploma might be helpful in demonstrating the value of the GED as a college entrance certificate, although it would be critical to such a study to acknowledge the life-status differences between the GED students and the NHSD students. (See Tables 5, 6 and 7 for some statistics derived from NPSAS:90 data)

There has been no national study done to assess the performance of GED certified students in America's community colleges. Studies which use a broad national sample population of GED students in community colleges are needed. To mount such a data collection effort would be costly in both time and money. An alternate solution might be to seek answers in some of the large national datasets which have recently been released or are due to be released soon (see Appendix B for a description of these datasets)

Table 5

Life Status Variables for HSD, GED, and NHSD students in 2 Year Public Institutions

	HSD	GED	NHSD
Age (mean)	N=6,124,750	N=439,230	N=157,320
	28.34	31.01	30.18
Gender (%)	N=6,041,800	N=435,440	N=152,780
male	44	35	53
female	56	65	47
Race (%)	N=6,170,210	N=450,410	N=159,540
Amer. Indian	1	2	3
Asian	5	3	10
Black	10	10	11
Hispanic	8	11	21
White	76	74	55
Father's education (%)	N=4,262,880	N=246,120	N=92,880
No HSD	20	33	44
GED	1	4	0
HSD	35	28	36
Trade	4	4	4
Some college	15	17	6
Bachelor's	16	8	6
Master's	7	4	3
PhD/profession	3	3	2
Mother's education (%)	N=4,484,530	N=275,580	N=97,430
No HSD	15	30	44
GED	1	1	1
HSD	47	38	40
Trade	5	5	3
Some college	16	14	7
Bachelor's	11	10	4
Master's	4	1	0
PhD/profession	1	0	0
Dependency (%)	N=6,162,620	N=446,190	N=157,320
Independent	64	88	72
Dependent	36	12	28
Marital status (%)	N=5,896,860		
not married	64	49	61
married	34	46	38
separated	2	5	0
Income (mean)			
dep. family AGI	N=2,233,210	N=53,640	N=44,680
	$40,981	$38,800	$26,775
ind. stu./spouse AGI	N=3,928,510	N=392,540	N=112,640
	$22,903	$18,441	$16,677

source: NCES NPSAS:90 Undergraduate Table Generation System

Table 6

Education Variables for HSD, GED, and NHSD students in 2-Year Public Institutions

	HSD	GED	NHSD
Aspirations (%)	N=5,095,260	N=342,800	N=112,990
trade	5	10	24
some college	16	22	24
Bachelor's	40	33	28
Master's	31	25	17
PhD/profession	8	9	8
Level (%)	N=6,170,210	N=450,410	N=159,540
1st year	64	69	86
2nd yr	30	28	10
3rd yr+	6	4	4
First-time student (%)	N=6,170,210	N=450,410	N=159,540
began '89-'90	26	29	0
began prior to '89	74	71	100
Credit hours this sem.	N=5,936,450	N=430,660	N=137,360
(mean)	6.93	7.21	5.44
GPA	N=4,948,150	N=356,910	N=101,070
(mean)	2.70	2.59	2.28
Residence (%)	N=6,170,210	N=450,410	N=159,540
campus housing	1	1	2
with parents	36	16	30
off camp.-not w/par.	62	83	68
Attendence status (%)	N=5,895,060	N=415,480	N=136,540
Full time, full yr	12	10	3
Full time, part yr	6	9	9
Part time, full yr	34	30	26
Part time, part yr	48	51	62
Any aid (%)	N=6,170,210	N=450,410	N=159,540
yes	27	41	25
no	73	59	75

source: NCES NPSAS:90 Undergraduate Table Generation System

Table 7

Percentage distribution of type and control of undergraduate institution by high school diploma

	N	Pub< 2 yr	Pub 2-3 yr	Priv <4 yr	Propri-etary	Pub 4 yr	Pub 4+ yr	Priv 4 yr	Priv 4+ yr
Total	16,271,270	1	42	2	9	14	18	9	5
HSD	14,983,910	1	41	2	7	15	19	9	5
GED	787,920	5	57	2	21	6	4	4	1
NHSD	403,140	5	40	5	48	1	1	0	0

source: NCES NPSAS:90 Undergraduate Table Generation System

Note: Percentages may not total 100% due to rounding

Conclusion

As Cameron and Heckman acknowledged in their study of labor market outcomes of GED certification, "the effect of the GED on wages comes primarily through its effect on certification for postsecondary training. The indirect effects for high school graduates and GED recipients are nearly identical at age 25 and statistically indistinguishable at age 28" (Cameron & Heckman, 1993, p. 33). The success of GED recipients compared to the success of traditional high school graduates at public two-year community colleges is, indeed, an important issue.

If the question is "Can a GED-certified student succeed in America's community colleges?", the answer, based on the research reviewed here, is "Absolutely!" If the question is "Does earning a GED predict success in America's community colleges?", the answer must be, "No, it does not, but earning a traditional high school diploma does not predict success in America's community colleges either." Before we can evaluate the impact of the GED credential on the community college student, we must clarify what we will use as a measure success. We must also level the field of comparison by using students in community colleges who have no high school certification as the control group for the study.

Perhaps the real question should be "Is success in a community college enough to open America's golden door for GED holders?" Although Kane and Rouse (1993) found the economic returns to a college credit to be about the same for both two-year and four-year schools, many say that the returns are not equal. According to some researchers, only those students who attend a 4-year institution can hope to rise above their economic status of origin (Adelman, 1992; Dougherty, 1987). Based on NPSAS:90 estimates, of all HSD students enrolled in postsecondary institutions, 27% are enrolled at a third year or higher level. This percentage drops to 9% of all GED students and only 3% of all students with no high school diploma. Each level of certification, then, seems to triple one's chances of having the key open the door.

If the GED is to be considered a second chance for entrance into higher education, if it is indeed a key that fits the lock on America's golden door, then national studies must demonstrate that this is so. Right now there are no such studies available.

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Appendix A

In her study of GED recipients enrolled at the four year campuses of the University of Wisconsin, Lois Quinn (Quinn, 1986; Quinn & Haberman, 1987) implies that the GED as it was normed in 1981 was not rigorous enough to certify readiness for academic work in a 4-year institution.

Contradicting this suggestion is her finding that the GED scores and the ACT scores of GED recipients were highly correlated (R=.7450). The high correlation between GED and ACT scores and the low correlation that Quinn cites between GED scores and first semester grades (R=.1738) combine to underscore what cannot be ignored when investigating GED recipients in higher education: achievement requires more than ability.

The GED is not a magic wand. It does not whisk away the personal distracters that prohibited traditional high school completion for the GED recipient. As this literature review has suggested, the life status of a GED student is usually very different from the life status of an HSD student. These differences do not facilitate success in higher education. That a quarter of the GED students who left the University of Wisconsin during Quinn's study had a grade average of A or B and that half who left had a grade average of C or higher suggests that these students did not leave because of lack of academic ability. These students faced challenges in their lives that superseded the academic.

At the time of the conclusion of Quinn's study, February, 1985, 15% of those GED students who had begun UW in 1979-80 had graduated, transferred, or were still enrolled. Quinn does not provide comparative statistics for HSD students. If one reads Quinn's report on the poor academic readiness and outcomes of GED recipients at UW with the assumption that the average HSD student entered UW well prepared and graduated within a reasonable period, then the report seems bleak indeed. Based on statistics discussed in the above literature review, however, it is likely that many HSD students came to UW in need of remediation and left before graduating. Had Quinn provided more comparative figures for both HSD students and those students who entered with no high school diploma, we might better be able to evaluate the impact of holding a GED on a student at the University of Wisconsin.

Appendix B

Longitudinal Datasets

Since 1972 the National Center for Educational Statistics has been collecting data for their National Longitudinal Studies program, designed to provide detailed information on the interaction of education and individual lives. Some longitudinal studies follow the same individuals through a decade or more of their lives and collect information on hundreds of variables for each person in the study.

National Longitudinal Study of 1972 (NLS-72)

Because the first of these datasets, the National Longitudinal Study of 1972 (NLS-72), began with the high school senior class of 1972, the number of dropouts and consequent GED recipients in the dataset would not be significant.

High School and Beyond (HS&B)

High School and Beyond (HS&B) collected data not only on students who were high school seniors in 1980, but also on students who were high school sophomores in 1980. Follow up studies on these same students were done in 1982, 1984, 1986, and 1992. In 1982 a special questionnaire was sent to those who had dropped out of school, but this group received the same questionnaire as high school graduates in the third and forth follow-ups. Unfortunately, it is impossible to determine who received a GED in the third follow up because of the nature of the composite variable that would contain that information. This problem might be corrected in the release of data from the 1992 follow-up.

If the problem is corrected, HS&B could provide data useful to understanding more about GED recipients. The HS&B dropout dataset would be useful in any case for understanding life status variables of those who are eligible for GED certification.

National Education Longitudinal Study of 1988 (NELS:88)

The National Education Longitudinal Study of 1988 (NELS:88) promises to be a valuable source of data on GED recipients. The study began in 1988 with 24,599 eighth graders. The first follow-up in 1990 included a dropout component which included 1,043 students who had left school between eighth and tenth grade. The second follow up, done in 1992, will include a much higher number of dropouts and perhaps

even some students who have earned a GED. This second follow-up is due for release soon. The dropout component is being handled by the National Opinion Research Center at the University of Chicago.

Like the HS&B dataset, NELS:88 will provide a rich source of information for understanding the high school dropout. Any subsequent follow-ups to this dataset should include a significant number of GED recipients.

National Postsecondary Student Aid Study (NPSAS:90)

The National Postsecondary Student Aid Study (NPSAS:90) collected data on more than 61,000 students enrolled in postsecondary institutions in 1990. There were 2,090 GED students included in this sample. Although the purpose of the study was to examine how students and their families pay for postsecondary education, NPSAS:90 is rich in demographic and performance variables and could provide a useful source of information for examining the GED student in postsecondary education. Numbers are weighted to provide estimates of the entire universe of postsecondary students in the United States.

Beginning Postsecondary Student Longitudinal Study (BPS)

The Beginning Postsecondary Student Longitudinal Study (BPS) is due for release in early 1994. It includes all those students in the NPSAS:90 sample who were first-time first year postsecondary students in 1990. There are 330 GED students included in the dataset. Most of the GED students from NPSAS:90 had taken first year courses before and were not included in BPS. BPS will collect student data every 2 years, including postsecondary transcript data. Even though the number of GED students is low, the BPS promises to be a rich source of data for the study of persistence of GED students in postsecondary schooling.

National Adult Literacy Survey (NALS)

The National Adult Literacy Survey (NALS) shows promise as a fruitful source of data for the study of GED recipients. Due for fall, 1993, release, it will include about 1,000 GED holders and should provide information which can be used in investigating why some GED recipients go on to higher education and why others do not.

Postsecondary Outcomes

The Postsecondary Student Outcomes study is now being planned by NCES. It will be a longitudinal study designed to provide consumer information relating to graduation and completion at postsecondary institutions. If a question could be put on the survey to identify type of high school certification, the dataset would be another rich source of information to be used in comparing GED and HSD students.